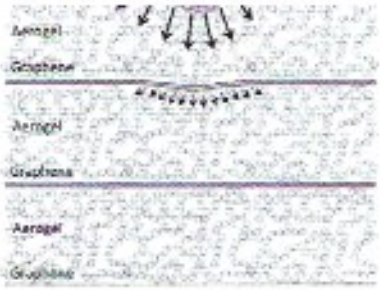
GCL COMPOSITE ARMOURS

Armour

The first product application that we have developed using our GCL composite technology is flexible body armour; our prototypes currently deliver UK Home Office-standards of stab and bullet protection with less than half the weight of existing armours.

GCL armour is comprised of alternating layers of GCL graphene/aerogel and other bullet- and stab-resistant materials; this graphic shows the multi-layer structure:





GCL proprietary technology; patent pending

The key difference between how GCL composite armour works versus other armours is force dispersion. Other armours (e.g. steel, Kevlar/Dyneema, ceramic) stop a bullet by the sheer strength of their materials - but the impact force of the bullet remains concentrated in a tight cone that travels through the material itself, often causing a spall effect where bits of the material break off on the other side of the impact.

In contrast, GCL composite armour works by dispersing the force of impact over a much larger area; thus each successive layer of GCL composite dissipates the impact forces more, slowing a bullet down until it stops. There is much less (if any) spalling that occurs with GCL composite armour.

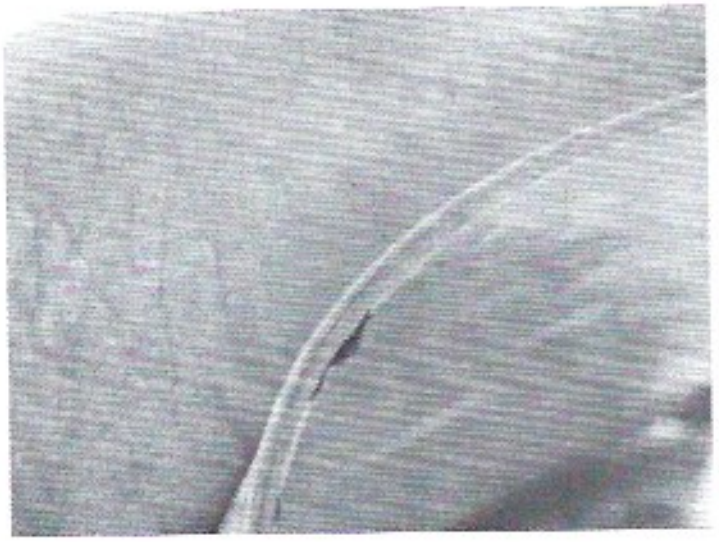
Here is a photo of our GCL composite armour in ballistics testing; the force dispersion can be seen in the yellow patches around the rifle bullet hole, which formed as the impact force of the rifle bullet was dispersed through knife stabs from earlier testing. Note that the ballistic clay behind our sample remained intact, showing that the impact forces were largely dispersed before they reached the ballistic clay.





Source: GCL proprietary technology, patent pending.

... and here is a close-up photo, showing the flexibility of multiple layers of a prototype version of our GCL composite:



Source: GCL proprietary technology, patent pending

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Graphene Composites Ltd (GC) is a nano-materials technology company. We combine graphene, aerogels and other materials into a range of composites that